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Anxiety Levels of Severe COVID-19 Patients at Haji Adam Malik Hospital Medan in 2022

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ABSTRACT.

Background: The COVID-19 pandemic is affecting the healthcare system and causing psychological changes, not only among healthcare professionals but also among citizens. These psychological changes are caused by depression, fear, anxiety, or insecurity. This study aims to investigate the anxiety level of severe COVID-19 patients who were treated at Haji Adam Malik General Hospital Medan in 2022

Method: This research is a descriptive observational study at the Department of Pulmonology and Respiratory Medicine Haji Adam Malik Hospital Medan from January 2022 until several samples were fulfilled. Sampling was done by consecutive sampling technique by filling Google Form questionnaire. The Hospital Anxiety and Depression Scale (HADS) questionnaire consists of seven items which can breakdown into anxiety subscales. The detail scores for every item ranged from zero to three. Score three indicated the highest level of anxiety. A total subscale score of >8 points out of 21 indicates significant anxiety symptoms. Data were analyzed descriptively to find out the frequency distribution of research subjects based on research sample characteristics.

Results: From 36 research samples, 23 samples (63.9%) were male, and 13 samples (36.1%) were female. On anxiety levels, it was found that HADS-A scores were severe in 21 patients

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with severe COVID-19 (58.3%) and moderate levels in 15 patients (41.7%) with severe anxiety levels.

Conclusion: Anxiety levels appear to be significantly increased in patients with severe COVID-19

Keywords: COVID-19, HADS questionnaire, Anxiety Disorders.

ABSTRAK.

Latar Belakang: *Pandemi COVID-19 mempengaruhi sistem perawatan kesehatan dan menyebabkan perubahan psikologis, tidak hanya di kalangan profesional kesehatan tetapi juga di antara warga negara. Perubahan psikologis ini disebabkan oleh depresi, ketakutan, kecemasan, atau rasa tidak aman. Penelitian ini bertujuan untuk mengetahui tingkat kecemasan pasien COVID-19 berat yang dirawat di Rumah Sakit Umum Haji Adam Malik Medan pada tahun 2022*

Metode: *Penelitian ini merupakan penelitian observasional deskriptif di Departemen Pulmonologi dan Kedokteran Respirasi Rumah Sakit Haji Adam Malik Medan dari Januari 2022 hingga jumlah sampel terpenuhi. Pengambilan sampel dilakukan dengan teknik consecutive sampling dengan mengisi kuesioner Google Form. Kuesioner Hospital Anxiety and Depression Scale (HADS) terdiri dari tujuh item yang dapat dipecah menjadi subskala kecemasan. Skor detail untuk setiap item berkisar dari nol hingga tiga. Skor tiga menunjukkan tingkat kecemasan tertinggi. Skor subskala total >8 poin dari 21 menunjukkan gejala kecemasan yang signifikan. Data dianalisis secara deskriptif untuk mengetahui distribusi frekuensi subjek penelitian berdasarkan karakteristik sampel penelitian.*

Hasil: *Dari 36 sampel penelitian, 23 sampel (63,9%) adalah laki-laki, dan 13 sampel (36,1%) adalah perempuan. Pada tingkat kecemasan, ditemukan bahwa skor HADS-A yang parah pada 21 pasien dengan COVID-19 berat (58,3%) dan tingkat sedang pada 15 pasien (41,7%) dengan tingkat kecemasan berat.*

Kesimpulan: *Tingkat kecemasan tampaknya meningkat secara signifikan pada pasien dengan COVID-19 parah*

Kata kunci*: COVID-19, Kuesioner HADS, Gangguan Kecemasan*

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1 Introduction

Anxiety is an effective future-oriented state that prepares an individual to deal with uncertain but possible negative events in the absence of a triggering stimulus.[1] Anxiety disorders prevalence is 13.3%, and the lifetime prevalence is 28.8%. [2] The prevalence of anxiety or often called general anxiety disorder (GAD) and panic disorder (PD) per year among US adults aged between 18 and 64 years was 2.9% and 3.1%, respectively. In the same place, the lifetime prevalence in women was known as 7.7%, while in men was known as 4.6% for GAD. In addition, the

prevalence of PD in women was 7.0%, while in men was 3.3% [3]. Responses can be adaptive and as a result, individuals are aware of potential threats and coordinate expected psychological, behavioral, and biological responses to prepare them. Experience is a major factor, but concerns about this process become more independent, unnecessary, out of control, and therefore morbid. [1]

The COVID-19 pandemic lead to dizziness and fear-related anxiety, clinical vulnerabilities, fear of becoming with COVID-19, and COVID-19-infected families were increase (75.2%). Anxiety due to fear of drug leakage is also should be a concern. Negative emotions consisting of anxiety, depression, and also anger increased rapidly, but positive emotions (measured using the Oxford Happiness score) and life satisfaction decreased during the pandemic. [4]

GAD-7 has been known as a valid diagnostic method and severity rating scale, with total scores for 7 items ranging from 0 to 21. Cut-off scores of 5, 10, and 15 are for mild, moderate, and severe anxiety, respectively. [3] A self-assessment questionnaire and the reliable questionnaire have the ability for detecting states of anxiety in a hospital outpatient clinic setting, this questionnaire is often called the Hospital Anxiety and Depression Scale (HADS). The HADS questionnaire consists of seven items that can break down into some anxiety subscales. A total subscale score of >8 points out of 21 could be noted as a significant symptom of anxiety or depression [5].

A recent study in China found statistically significant differences between illness, smoking, and HADS-A scores (p-value = 0.011 / 0.020). The difference in HADS-A scores between age and Insomnia Severity Index (ISI) groups, the difference in CRP/C-reactive protein between lung infections, and the correlation between the two scores indicated statistically significant. Anxiety was associated with poor lifestyle such as poor sleep quality, smoking, and medical history of COVID-19 patients [6]. The COVID-19 pandemic could be triggered by a health crisis and lead to psychological changes for medical personnel and citizens, and these psychological changes are caused by anxiety, fear, depression, and insecurity [7]. Therefore, the authors are interested in discussing anxiety levels in severe COVID-19 patients at Haji Adam Malik Hospital in Medan.

2 Method

An observational descriptive study was carried out at the Department of Pulmonology and Respiratory Medicine Haji Adam Malik Hospital which is located in Medan City, North Sumatra Province. The research sample was thirty severe COVID-19 patients who were recruited using consecutive sampling technique and met inclusion criteria, namely Severe COVID-19 patients who were still cooperative in filling out the questionnaire, willing to participate in this research, and signed the informed consent; and met exclusion criteria, namely severe COVID-19 patients with mechanical ventilation and history of underlying psychological disorders.

The sample recruitment process was carried out on patients with COVID-19 at RSUP H Adam Malik Medan. Then, data were collected on the characteristics of the research participants (gender). A physical examination is performed to assess the patient's symptoms degree. Then nasopharyngeal swab was performed for SARS-CoV-2 PCR examination. Hospital Anxiety and Depression Scale – Anxiety (HADS-A) questionnaire was filled out to determine the patient's anxiety level which was divided into mild, moderate, and severe. Scores for each item ranged from zero to three. Of these, three indicate the highest level of anxiety. A total subscale score of >8 points out of 21 indicates significant anxiety symptoms.

All data obtained will be documented and tabulated in the research sample data table. Data were analyzed descriptively to determine the frequency distribution of research subjects based on research sample characteristics. This research design has been approved by the Ethical Committee Faculty of Medicine, Universitas Sumatra Utara, with the registered number 450/KEPK/USU/2022.

3 Results

Based on Table 1, After researching 36 patients who fulfilled the inclusion and exclusion criteria in this research, the following results were obtained. Based on gender, 23 samples (63.9%) were male and 13 samples (36.1%) were female.

Table 1 Frequency Distribution of Research Sample Characteristics

Characteristics		**Total (n)**	**Percentage (%)**
Gender	Male	23	63.9
	Female	13	36.1

Based on Table 2, anxiety symptoms experienced by severe COVID-19 patients, it was found that the majority of symptoms often felt tense or “hurt” (50.0%); feeling of fear as if something terrible was going to happen but not so bad (58.3%); from time to time thought of fear crossed their mind (50.0%); rather often appear feelings of fear such as nausea (44.4%); somewhat restless (59.3%); and quite often feel a feeling of panic (47.2%) but the patient can still sit comfortably and feel relaxed (75%).

Table 2 Frequency Distribution of Research Sample Anxiety Symptoms

	Symptoms	**Total (n)**	**Percentage (%)**
I feel tense or "hurt"	From time to time, once in a while	17	47.2
	Very often	18	50.0
	Almost always	1	2.8
I got a kind of scared feeling as if something terrible was going to happen	A little, but it doesn't worry me	7	19.4
	Yes, but not so bad	21	58.3
	Of course and uncomfortable	8	22.2
A thought of fear crossed my mind	From time to time, but not very often	18	50.0
	Often	14	38.9
	Too often	4	11.1
I can sit comfortably and feel relaxed	Not often	2	5.6
	Usually	27	75.0
	Of course	7	19.4
I have a kind of fear like bloated and nauseous	Not at all	1	2.8
	once in a while	4	11.1
	Quite often	16	44.4
	Very often	15	41.7
I feel restless because I have to be busy	Not too restless	1	2.8
	A little restless	21	58.3
	Unbelievably nervous	14	38.9
I suddenly feel a feeling of panic	Not at all	1	2.8
	Not too often	2	5.6
	Quite often	17	47.2
	Very often	16	44.4

Based on Table 3, HADS-A score, 21 patients with severe COVID-19 (58.3%) with moderate anxiety levels and 15 patients (41.7%) with severe anxiety levels were found.

Table 3 Anxiety Levels of Severe COVID-19 Patients Based on HADS-A Score

Anxiety Level		**Severe COVID-19 patients**	
		Total (n)	**Percentage (%)**
HADS-A Score	Moderate	21	58.3
	Severe	15	41.7

4 Discussion

Despite rapid COVID-19 vaccine development for prevention and global mass vaccination efforts worldwide, including vaccine boosters, the emergence of a new variant of SARS-CoV-2 still threatens. [8] It is estimated that overall the prevalence of anxiety worldwide in the COVID-19 era was 25%. [9] Symptoms of COVID-19 illness vary from asymptomatic to early stages of COVID-19 illness with most symptoms being fever, dry cough, and fatigue. Some patients were also shown sore throat, nausea or vomiting, muscle or joint pain, conjunctivitis, nasal congestion, headache, loss of sense of smell or taste, or both, various types of skin rash, chills, diarrhea,

dizziness, and severe shortness of breath. If the disease continues to get worsening and progresses, the patient will experience decreased blood oxygen (hypoxia), lung damage, and multiple organ dysfunction. More rare and severe neurological complications consisting of stroke, delirium, encephalitis, and nerve damage are rare complications of COVID-19 disease. [10]

One of GAD's etiological causes is a fairly traumatic event. The changes and difficult conditions that COVID-19 brings can be. This is shown in Huang et al. survey that 33.3% of their respondents had GAD symptoms. [11]A study conducted on 7,236 Chinese people showed a total of 35.1% of COVID-19 patients had developed anxiety symptoms. Of these, the prevalence of anxiety symptoms in younger participants (<35 years) was significantly higher than in older participants. Multivariate logistic regression indicated that younger participants (<35 years old) and spending time concerned about COVID-19 (≥3 hours per day) commonly associated with GAD and medical workers lead to poor sleep habits. [12] Another study conducted on 5,851 people found 22.6% of participants experienced anxiety during the COVID-19 period. [13]

A recent study that observed 221,195 subjects revealed that the proportion of men ranged from 37.5 as shown by Liu et al study to 77.08 as shown by Chen et al study. Research in Pakistan shows that COVID-19 cases are mostly found in males (72%). According to the Global Health data, the death rate and the number of COVID-19 confirmed cases was highest among male in various countries. Men are likely to have outdoor workspaces, therefore, higher risk of contracting COVID-19. A study in China shows that 50% of men smoke which is associated with poor COVID-19 disease outcomes. Active smokers were 1.4-fold more likely to experience severe symptoms of COVID-19 than non-smokers. This can be explained because smoking is associated with higher ACE2 expression (SARS-CoV-2 receptor). [14] Besides that, the circulation of ACE2 levels was higher in males than in females and in patients with diabetes than in patients with cardiovascular disease, the poor prognosis more often occurred. [15]

Women have XX chromosomes which are double copies of a major immunity gene compared to a single copy by XY in men. This gene is directly associated with the common infection reactions (innate response) and more specific responses against microbes, including antibody formation (adaptive immunity). Therefore, the female immune system is generally more responsive to infection. [14]

Lei et al. found an 8,3% of patients experienced anxiety with 93/1593 (5.8%) classified as mild anxiety, 33/1593 (2.1%) classified as moderate anxiety, and 7/1593 (0.4%) classified as severe anxiety. The lower median household income, the education level, and the higher self-evaluation knowledge level were associated to worry about infection, lack of greater property damage, psychological support, and poor health was significantly related to higher anxiety possibility and severity. [16] Moghanibashi-Mansourieh found anxiety levels were severe in 9.3% of participants and very severe in 9.8% of participants. [17] Chew et al. (2020) [18] conducted a study among 906 healthcare professionals and found that 79 subjects (8.7%) suffered moderate to very severe

anxiety. Another work, by Ahmed et al. (2020) found higher levels of anxiety (29%), mild level 10.1%, moderate level 6.0%, severe level 12.9%, and lower mental well-being than usual (32.1%) among 1,074 people in Hubei province of China. [19] In another study distributing 124 questionnaires, with an 84,7% response rate, it was shown that the prevalence of total mild anxiety (18.1%), moderate anxiety (10.5%), and severe anxiety were 5.7%. Respondents who had experienced infection by COVID-19 were more likely to develop anxiety levels accompanied by depression with the incidence rates were 31.6% and 12.6%. [20]

Spending more duration on childcare during lockdown could increase the probability of anxiety up to 2.21 (95% CI 1.59 to 3.06, $p<0.01$) in India. In Peru, was reported as much as 1.35 (95% CI 1.10 to 1. 67, $p<0.01$), and in Vietnam was reported as much as 1.4 (95% CI 0.99 to 1.99, $p<0.1$). For those who spent more time working in the family business, the probability of anxiety was 1.61 times (95% CI 0.92-2.81, $p<0.1$) higher in India. The probability in Peru was 1.29 (95% CI 0 .98-1.67, $p<0.1$, ns for women), and in Vietnam was 1.80 (95% CI 1.20 to 2.68, $p<0.01$). [21]

Psychological distress is emotional distress conditions triggered by various stressors and demands that increase the difficulty in people coping with situations. This feeling is often characterized by depression and anxiety. Severe psychological and behavioral changes can be triggered by some policies during the COVID-19 pandemic, such as restricted movement, social distancing, and lockdowns. That policy implementation specifically the lockdown, caused people to work from home, increased screen time, and prohibited them from visiting their community, such as religious community, resulting in stress and non-regulatory emotional problems, which promote individuals to develop psychological disorders. Research conducted in Hubei (a city where the COVID-19 pandemic began) revealed that 304 of 460 subjects (46.30%) were diagnosed with anxiety symptoms, self-mutilating or suicide (23.26%), and insomnia (42.01%). [22]

In this research, based on the HADS-A score, 21 patients with severe COVID-19 (58.3%) were found with moderate anxiety levels, and 15 patients (41.7%) with severe anxiety levels. A recent study in China showed statistically significant differences between smoking, disease, and HADS-A scores ($P = 0.011 / 0.020$). Studies by Alnazly show 60% of patients with very severe anxiety, and 35% have very severe anxiety scores (20.37 ± 10.80). Factors that were associated with psychological distress were married status, aged > 40 years old, male gender, and comorbidities. Social support ratings indicated moderate to high levels of perceived support for all aspects (significant other: 5.17 ± 1.28, friends: 5.05 ± 1.30, and family: 5.03 ± 1.30,). Interestingly, weak correlations were found between social support and anxiety ($r < 0.22$), indicating the weak relationship of the support system with anxiety. [23] The other factor that increases perceived anxiety is the regulations of social distancing, which require restrictions on interpersonal contact. In certain groups, the prevalence of fear varies among medical students and health workers with 25% in health workers to 36% among students. In Cybulski et al study, the prevalence of anxiety symptoms was 41.1%. Of these, it consisted of mild level (28%), moderate level (7.7%), and 5.4%

of them developed severe anxiety symptoms. The other study among university students found the anxiety prevalence was 65%, consisting of mild level (32%), moderate level (21%), and 14% developed severe anxiety disorder cases. [9]

Serotonin levels decreasement with increasing COVID-19 severity has been reported and can be used as a disease progression biomarker. The determination of blood bioactive substances levels was important for improving the diagnostic process of post-COVID anxiety disorders because of its major role in the pathogenesis of affective disorders. [24] Psychiatric disorders and impaired psychological reactions have been associated with cardiovascular disease, including hypertension, which has also been observed in diabetic patients. Systematic reviews show that people with chronic disease experience a worse degree of COVID-19 severity than healthy people, therefore the risk of severe Sars-CoV-2 is higher. [25]

5 Conclusion

COVID-19 patients are predominantly male and more likely to experience significant severity. Anxiety levels were significantly increased in patients with severe COVID-19.

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